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SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *The American Journal of Psychology; Ar. de Ps.* = *Archives de Psychologie; Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie; Ar. f. sys. Ph.* = *Archiv für systematische Philosophie; Br. J. Ps.* = *The British Journal of Psychology; Int. J. E.* = *International Journal of Ethics; J. of Ph., Psy., and Sci. Meth.* = *The Journal of Philosophy, Psychology, and Scientific Methods; J. de Psych.* = *Journal de Psychologie; Psych. Bul.* = *Psychological Bulletin; Psych. Rev.* = *Psychological Review; Rev. de Mét.* = *Revue de Métaphysique et de Morale; Rev. Néo-Sc.* = *Revue Néo-Scolastique; Rev. Ph.* = *Revue Philosophique; Rev. de Ph.* = *Revue de Philosophie; R. d. Fil.* = *Rivista di Filosofia; V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie; Z. f. Ph. u. ph. Kr.* = *Zeitschrift für Philosophie und philosophische Kritik; Z. f. Psych.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane, I. Abtl. Zeitschrift für Psychologie.* —Other titles are self-explanatory.]

Psychologie du langage. H. DELACROIX. Rev. Ph., XLIII, 1, pp. 1–27.

Recent studies in the science of language have shown the necessity for a thorough psychological investigation of the subject. I. *Nature and convention.*—Language which directly expresses the emotions is sometimes called natural language. It depends upon: spontaneous external representation of the desires and feelings; ability to represent by signs the states of the individual mind; sounds out of which words are formed; and movements —which may become gestures—accompanying discourse. Gestures show us much more clearly than words the passage from natural language to conventional language. Natural gestures are of three types: those which indicate an object, those which are imitative, and those which are abbreviations of more complex movements. They change over into conventional signs when they cease to express what they were originally meant to express. This same metamorphosis of natural sounds into conventional signs is seen in the use of words, and this is the problem of the origin of language. The problem depends for its solution upon the answer to the two following questions: How does a natural expression change over into a symbol? Out of what original sounds does man produce language? The first of these questions is the problem of human intelligence, of the formation of general ideas, and it is answered by psychology. The second problem is insoluble at the present stage of science. II. *The laws of phonetics.*—We know that for the most part the evolution of language follows mechanical laws. These mechanical relations have been expressed in two groups of phonetic laws: the first deal with the process of articulation and the consequences of the modifications which the organs of speech go through; the second concern themselves with phonetic modifications which depend on the interaction of the elements in words and phrases. Examples of the first group are: the theory that phonetic modifications depend on an æsthetic motive, euphony; and the theory that they are really grammatical and logical in nature. Examples of the second group are the laws of assimilation and the like. These laws are intended to show how in the course of development, meaning gets separated from its sign. Other laws are sometimes cited, in the effort to show that there is a logic immanent in language itself, which sets an ideal which language always approximates. III. *The development of language in the individual.*—Three periods can be distinguished in the development of the child: a period in which he relies on crying as the only form of expression; a period of articulate sounds, devoid of meaning; and the appearance of real language. Two principles are involved in this development: the tendency to express the subjective feelings, and the tendency to imitate others. The last of these tendencies shows the social nature of the origin of language in the individual. Rousselot claims that when a child once gets a hold on language, his *phonetique* is fixed once for all, but this does not seem probable, because there is always a discrepancy between the linguistic consciousness and objective language. IV. *The forms of language as an expression of thought and the formulation of the judgment.*—The judgment is formulated by means of a phrase, and to the elements of the judgment correspond the elements of the phrase. Since the word does not exist alone, the phonetic word does not coincide with the word of syntax. For psychology a phrase is a verbal unity which expresses a thought; language would have no meaning if it were simply a mosaic of words. Now in studying the functions of a word in a phrase, we see that the grammatical categories correspond to those of psychology: the substantive is object, the adjective is quality, the verb is action or state, the particle is relation. The substantive has a peculiar value: it is the basis of the phrase, and has an especial development in all languages. Now the judgment has for its verbal expression, the phrase; it is a phonetic unity, expressing logical and emotional relations. Three types of such phrases can be distinguished: exclamation, assertion, and interrogation. Meillet has shown that the constituent elements out of which grammatical forms are made are two: analogy, which consists in making one form on the model of another; the 'grammaticalization' of words, the passage of a word automatically into an element of grammar. V. *Changes of signification. Special tongues.*—An important psychological law dominates all changes of signification. The concept consists in the analysis of complex representations. In the unity of apperception we grasp an accentuated character to which the word applies by way of designation, but at the same time it applies itself to the whole of which the word is a part, and designates the whole implicitly. The word then comes to have a complex and changing meaning, because the same word is used to designate different things in view of their common character. We give a word new meaning when we place in relief some accessory character of the object designated by the word. Thus the inadequacy of language to thought accounts for the changes in signification, and makes possible aberrations from the normal, found in special tongues.

F. W. A. MILLER.

The Relation Between Art and Science. P. J. HUGHESDON. Mind, N. S., XXVII, 105, pp. 55-76.

Art and science are parallel and complementary; they provide parallel and complementary conceptions of reality. The freely conceiving mind is active in both; but the *organon* of art is intuition or imagination, through which the relations of the real world are judged according to fitness and harmony; the *organon* of science is the reason, which deals with reality abstractly and in terms of ground and reason. Further, art and science agree in spirit, but differ in form; for truth, or the nature of reality, prized for its own sake, is the essential thing in both. Art, however, consists in individualized representation; in it, actuality is re-synthesized and intensified. Science, on the other hand, is generalized explanation; in it actuality is analyzed and clarified. The author then points out the correspondence between art and the various sciences, attempting to correlate with each science a particular kind of artistic or æsthetic experience. The result is a classification of art parallel to that of the sciences. But the correspondence turns out to be defective over areas concerned chiefly with relative truth of the lower grades of reality. Neither art nor science seems to have primarily or directly any relation to feeling and emotion. Both are concerned primarily with thought, and both secondarily with emotion. The truthful representation of reality is the essence of both; the emotional accompaniment, though psychologically necessary, is not essential.

JULIUS COHEN.

Concerning the Nature of Philosophy. D. W. PRALL. J. of Ph., Psy., and Sci. Meth., XV, 5, pp. 127-130.

The suggestion is offered that philosophy is simply science itself as distinguished from the particular sciences. This idea is presented with reference to the objection often raised against 'self-psychology' that the latter is a philosophical rather than a scientific inquiry. It appears that all scientific inquiry, when it proceeds carefully enough and criticizes its presuppositions, necessarily turns into philosophy. Philosophy is the concrete embodiment of science in general. In insisting on the central fact of the self, 'self-psychology' is philosophical just in that it is trying to be truly and fully scientific.

MARIE T. COLLINS.

Philosophy and Edification. BENJAMIN W. VAN RIPER. J. of Ph., Psy., and Sci. Meth., XIV, 20, pp. 550-553.

Philosophy, as formerly taught, was enveloped in a sacred and mysterious atmosphere. To-day there is in vogue a too dispassionate method of presenting the subject, for philosophy has a definite office of edification. This claim is substantiated by history, and by present practice, since ethics and metaphysics are correlated. A teacher cannot edify, however, by equivocation or exhortation, for he would thereby prejudice his pupils. Furthermore, a gloomy interpretation will not inspire, and noted pessimists show that such an interpretation admits of escape. It is a momentous fact that one must adjust oneself to cosmical conditions, and success in such adjustment is edifying.

MARJORIE S. HARRIS.

The Relation of Truth to Tests. DENTON L. GEYER. J. of Ph., Psy., and Sci. Meth., XIV, 23, pp. 626–633.

There are various theories as to the meaning and criteria of truth. Professor Dewey has identified truth with verification, and thus the definition of truth with one of the tests for it. For Mr. Bertrand Russell the meaning of truth is correspondence with fact, and its criteria are self-evidence and coherence. C. S. Peirce defined truth as the opinion fated to be ultimately agreed to by all who investigate, and he proposed scientific experiment as the criterion. It is well, however, not to limit ourselves to any one test, but to find a place for all the criteria: experiment, coherence, clearness of the idea, simplicity, absence of exceptions, inconceivability of negation. For progress toward truth as ultimate agreement, we must both render our statements more precise and improve our tests for their truth.

ERNEST BRIDGES.

Concerning Alleged Immediate Knowledge of Mind. JOHN DEWEY. J. of Ph., Psy., and Sci. Meth., XV, 2, pp. 29–35.

We are not immediately aware of the actual motives or emotions upon which we act. An emotion, first taken to be one of pure magnanimity, may later be found to be prompted by love of praise. Accepting the idea that motives are states of consciousness, how is error possible as to what they actually are? The nature of an emotion, such as generosity, can only be definitely asserted to be of such a quality, in the light of the objective conditions and consequences of its particular setting. We can only characterize the emotion in terms of stimuli and response and not in terms of the state of consciousness in itself. There is no more reason for supposing that personal events have a nature or meaning which is one with their happening, and hence open to immediate infallible inspection, than is the case with impersonal events. In each case the event only sets a problem to knowledge, namely, the discovery of its connections. It is quite compatible with the behavioristic standpoint that the observation and understanding of an immediate attitude is conscious. It is merely contrasted with the impulsive or routine behavior in that future things, not yet having happened, operate as part of the stimulus in a present response. And so the immediate can be understood only in relation to its cause and its consequences.

EDGAR DE LASKI.

La conservation des images et les théories de la mémoire. J. JEAN LARGUIER DES BANCELS. Ar. de Ps., XVI, 64, pp. 349–356.

Two theories are advanced to explain how memory is retained. One which we will call the 'doctrine of recurrence' maintains that memory preserves itself in its entirety; the other, the 'doctrine of vestiges,' asserts that memory exists only in so far as it has left traces in the present. The Epicureans maintained the theory of recurrence, asserting that to remember is not to recall what no longer exists but to assemble (*recueillir*) that which has never ceased to be. This theory is most definitely upheld, among modern philosophers, by Bergson. Memory, for him, is a function of the mind, co-extensive with consciousness, registering and storing all the events of our daily life. The 'doctrine of vestiges' was held by Aristotle and taken up again, in more recent times, by Descartes and Malebranche. For Malebranche, our perceptions are correlative with the fibers of the brain, and memory is preserved by the nervous facilitation of particular brain fibers through the constant excitation of particular perceptions. This physiological interpretation of the 'doctrine of vestiges' is the one most current among contemporary psychologists such as Ribot. But with our present lack of knowledge of brain physiology, both the 'doctrine of recurrence' and the 'doctrine of vestiges' can be equally maintained. Psychology is justified in holding to either theory.

EDGAR DE LASKI.

The Presuppositions of a Behaviorist Psychology. H. HEATH BAWDEN. Psych. Rev., XXV, 3, pp. 171–190.

Just as we are slowly discarding the idea of vital force in biology, so we must give up soul or mind or consciousness or ego or self, as distinct from a certain kind of behavior, in psychology. Mind or consciousness is not something superadded to behavior; it is behavior of a certain sort. Like gravitation or evolution, mind is merely a generalization from certain facts, the statement of a type of relationship. The word mind is simply a class name standing for an observed uniformity of events; it signifies an assemblage of particular facts of adaptation and adjustment in behavior. The mental, with its retinue of ramifications into consciousness and attention, sensation and image, affective and cognitive modes, is but a name for behavior of that sort which demands something else than itself for its own completion. This new other-referring and other-demanding quality in an act, this indicative or demonstrative, this symbolizing, inducing, representative character is the distinctive mark of the mental. And psychology, from this point of view, is the science of the behavior of organisms in so far as they exhibit mentality. The author quotes Bode who asserts that "all experience is a kind of intelligence, a control of present behavior with reference to future adjustment. It is this relationship of present response to the response of the next moment that constitutes the distinctive trait of conscious behavior. Psychology, therefore, is properly a study of the conditions which determine the change or development of stimuli, such as memorizing lessons, solving problems and forming habits." Until quite recently introspection has been held to be the distinctive and unique method of psychology. But there is nothing which justifies this distinctive characterization of introspection; introspections to be valid and possess any value must be objectified and externalized. Consequently, the method by which these observations were taken would differ in no essential way from the objective methods of the other sciences.

EDGAR DE LASKI.

Advance Adaptation in Behavior. S. BENT RUSSELL. Psych. Rev., XXIV, 6, pp. 413–425.

Animals having the most highly organized nervous systems are the best adapted to endure changes in the environment. Provision in advance for change in the environment may be termed purposive behavior or advance adaptation. Taking the precaution to provide oneself with an umbrella, when it looks like rain, is such a case of purposive behavior. But this is not a recognition of consciousness as a factor in the operations. Behavioristic principles rest on the theory that behavior is due to instincts and habits. In childhood one acquires numerous habits by executing certain movements, while in maturity one's behavior is largely governed by habits such as those of language and social conventions. New situations which the individual faces are controlled largely by instincts. In the educated man we find advance adaptation most highly developed. For it is noticeable that the degree of purpose develops correlatively with the accumulation of knowledge, *i. e.*, with the formation of associations. Children are trained to purposive behavior through language and mechanisms of habit. A child is made to tell what he is going to do and what good will come of it. So it is, that all purposive behavior can be explained as due to nerve mechanisms. If the formation of habit can be explained in physiological terms, advance adaptation can be accounted for in the same way. Mechanistic interpretation of purposive behavior or advance adaptation is therefore adequate to explain psychological phenomena.

EDGAR DE LASKI.

Relevant and Irrelevant Speech Instincts and Habits. P. F. SWINDLE. Psych. Rev., XXIV, 6, pp. 426–448.

The audible, vocal responses of certain birds and of the human being are instinctive and may become habitual; for a habit is really an instinct which occurs more frequently than originally. The frequency of occurrence of an instinct is necessarily increased if it is associated with and is regularly conditioned by at least one other response of the same individual. Relevant speech instincts and habits are those responses of the individual which serve as stimuli to call forth predictable responses in other individuals, and other speech instincts and habits, whose responses are at first irrelevant or unpredictable, can become relevant through training. The barbet, or the bearded bird, sings the letter *a*, as in art, approximately in the tempo of 0.2 sec., the largest complex of which contains not less than five hundred *a's*. This irrelevant speech instinct can become a relevant habit. By striking the glass of the bird's cage at the fourteenth and again at the thirty-fourth *a*, the habit of stopping the singing or of stuttering at those points can be induced. The human being also stutters in a manner similar to the barbet but in such a very rapid tempo that for the hearing organism an apparently continuous tone results. Another irrelevant speech instinct is stammering, which differs from a stutter in being a distinct explosive compound rather than a single vowel. All conventionalized social means of vocal communication are simply habitualized stutters and stammers. When these elements of speech are conventionalized, they are ordinarily called letters, monosyllables, words, sentences and gestures. Undesirable combined series of speech compounds may be dissociated by presenting stimuli which will cause the patient to repeat the undesirable activity very rapidly until at least a large number of the stimuli cease to call it forth. This results not in an absolute, but only in a relative forgetting of the undesired response. It is suggested that the fact of relative forgetting of the superfluous response is due to a dissociation of certain organic structures involved; that this dissociation is in turn a result of a simplification or purification of the structures.

EDGAR DE LASKI.

The Struggle for Existence, and Mutual Aid. J. MACLEOD. The Hibbert Journal, XVI, 2, pp. 206–222.

The phrase 'the struggle for existence' has received a too limited interpretation. The current representation of its meaning is one-sided, for its scientific implication is that each living thing must work for the preservation of self or offspring. Such activity may be a struggle merely against an inanimate foe. A plant in the desert, for example, uses means to defend itself against drought. One species grows ephemeral roots during a shower that it may, by means of them, suck in the water as speedily as possible. Indeed, there are countless examples of struggles for existence in which the foe is only inanimate nature and no living thing is injured. But even between living things there is often no hostility, for, in working for self preservation, one being often inadvertently aids another. Thus the bee aids the flower while getting its own sustenance. In fact, mutual aid is common in nature. The importance of mutual aid for human society becomes evident if we compare society to a living being. Social relations are observable in so simple a plant as the *ulothrix*, which grows in ponds and is the threadlike product of successive divisions of a germ cell into cells which are all alike except one, the root cell. This root cell attaches itself to a rock and thereby holds the whole system in place. This cell cannot, however, acquire its own nourishment, but is supplied therewith by the cells it supports. Not only is the *ulothrix* made up of single cells which aid each other, but each many-celled being is a unity made up of one-celled beings closely bound by mutual aid. In fact, without aid, a many-celled being would be impossible. Extending the analogy further, it becomes evident that the interests of a human society can best be furthered through mutual aid. We conclude, then, that science reveals the fact that the struggle for existence not only may not be injurious to other forms of animate life, but is often helpful. We may hope from science a further revelation of the ideal of humanity.

MARJORIE S. HARRIS.

Docility and Purposiveness. RALPH BARTON PERRY. Psych. Rev., XXV, 1, pp. 1–20.

The process of learning may be interpreted in terms of purposive behavior without thereby implying the operation of any but mechanistic factors. In responding, the organism exhibits two propensities: a higher and a lower. The higher, or selective propensity, excites activity and determines its character and end; in a word, dominates the whole situation. The lower propensity is more specific, transitory and tentative. The selective propensity chooses from the tentative propensities that which is eligible, *i. e.*, that which will further the process over which it is dominant. In responding, then, the organism may be said to be acting purposively when its behavior is determined by a controlling propensity amplified by an eligible, or congruent propensity. A purposive act, so determined, must, however, be variable in three respects. First, the response must be variable and this variability of response increases with the ascent in the scale of animal life. Second, there is variability in respect to the feature of the environment to which the organism responds. Third, there is variability with respect to the consequences, for they are not always determined by the controlling propensity. Thus, purposiveness contains an element of variability. Not only can purpose and response be interpreted in mechanistic terms, but what is termed as conscious purpose we may construe as the releasing by a stimulus of a response which is, in part, the end of the endeavor. Furthermore, what appears as a cognitive response is merely the attentive 'set' which furthers the consummation of the purpose. Thus we find that a teleological vocabulary has meaning even in a behavioristic description of the process of learning. We have here suggested what may be also considered as a crude account of the higher purposive processes of man. In such processes, the ideas—that is, the stimuli which excite anticipation—are centrally aroused and the end attained may be only a situation creative of new expectations.

MARJORIE S. HARRIS.

Structure. FREDERICK J. E. WOODBRIDGE. J. of Ph., Psy., and Sci. Meth., XIV, 25, pp. 680–688.

Whatever may be the end or the cause of an operation, our curiosity is largely satisfied and our efficiency is much improved when we find out the structure to which the operation conforms. Structure is characteristic of operations universally. We never understand a thing so completely as when we understand its structure. Structure has for its principal attributes completeness and inertia.

ERNEST BRIDGES.

The First Antinomy of Kant. CHARLES W. COBB. J. of Ph., Psy., and Sci. Meth., XIV, 25, pp. 688–690.

Kant's first antinomy has for its thesis this: "The world has a beginning in time." In proving the thesis, he in the end assumes that the time series has a first term, an hypothesis which he rejected at the outset of his proof. Consequently, the antinomy is unsound.

ERNEST BRIDGES.

Sovereignty and Moral Obligation. W. E. HOCKING. Int. J. E., XXVIII, 3, pp. 314–327.

This article is an attempt to investigate what it is in human relations that has given the concept of sovereignty a foothold. Certain historical conceptions of sovereignty—those foreshadowed by Aristotle, enunciated by Hobbes, and commonly, though erroneously, attributed to Hegel—are neither actual nor expressive of any working ideal. Certain considerations, *e. g.*, the fact that the state has moral duties and responsibilities, lead one to impute a real, over-individual personality to the state; but it is difficult to make this view convincing. A better theory of the state is based on psychological considerations, empirically valid. Men are held together in two general types of association: 'social groups,' in which the bond of union is common, but not vital, interest; and 'vital circuits.' In 'vital circuits' the bond is such that if any part of the connection is injured, the life of the whole is endangered. A political whole or state is such a circuit, because it is based on the deeper needs of human nature, and these needs, in the case of any given circuit, can only be satisfied by peculiar material conditions. Within such an entity there are certain facts which give meaning to the notion of sovereignty: the need for finality of decision, and the psychological priority of the political interest. This interest is the need for adjusting all special claims within the state to each other, and the political sovereign is the will that this attempt at coördination shall take place. Neither the justice of legality nor of equity applies without qualification to the state. The conscience of the world must learn to distinguish between those interests which states have in common, and those which are peculiar and not easily understood from without.

KATHERINE GILBERT.

What is Formal Logic about? ARTHUR MITCHEL. Mind, N. S., XXVI, 104, pp. 428–448.

I. *The presupposition common to intellectualistic tradition and to pragmatic criticism.*—The presupposition of the intellectualistic tradition is that the nature of thinking is determined by the logical interest. This presupposition is the basis of the pragmatic criticism as expressed in the impugnment of formal logic by Schiller, Mercier, and Sidgwick. The criticism is focused upon the intellectualistic bias for a certain syllogistic conception of thinking, and presupposes the logical interest in a broader theory of the nature of thought. II. *Two sources of difficulty in scientific abstraction.*—There is nothing surprising in the fact that logical method and material have not yet been accurately defined. The motives to cognition form an intricate and complex tangle, from which it is hard to extricate and keep straight any single thread. Moreover, it is obvious that one science conditions another, and this interdependence makes it difficult to keep the intellectual interest in abstraction free from interest in more concrete concerns. III. *These difficulties are at the maximum in logic.*—In the first place, every datum of experience is a datum of logic, so that logic is as complex as experience itself. In the second place, logic is precisely the ultimately fundamental science. It is the science of sciences, as Aristotle said. The only defect of logic is that it is too illogical; it lacks rigor in application. IV. *The confusion of logical interests with others.*—Thought is the subject-matter of logic, to be sure, but only in so far as thought is meaning. Meaning is infested with a swarm of ambiguities, due to the intersection within it of a vast number of interesting factors. Meaning has its psychology, epistemology, rhetoric, and ontology. But logic can use its term, universal, and by means of it abstract from all these other concerns. V. *The logistic definition of universality.* Whatever is of logical significance in discussions of Induction in logical treatises pertains to the logistic definition of universality. Since causation is a relation of ground and consequence, the significance of 'principles of elimination' and the five 'causal methods' is that they form the material in which logic finds its category of universality. Freed from psychological and epistemological questions, the five causal methods reduce to two: that is not the cause of P which is (1) absent when P is present (*i. e.*, not indispensable), (2) present when P is absent (*i. e.*, not adequate). Neither of these conditions is sufficient to define a cause, but their logical product does so. Causality is thus a limit between two variables,—more than indispensable adequacy of physical conditioning, less than adequate indispensableness of physical consequenciality. Causality is not a genuine relation between physical things, although it has no meaning outside that sphere. By virtue of being an adequate physical condition, a meaning (thing or event) is a real cause; by virtue of being an indispensable physical consequence, a meaning is a real effect. Agreement eliminates inadequacy; difference eliminates indispensableness. Hence the two irreducible causal methods have for their ideal the approximation of 'causation' to 'causality,' practical and technical difficulties always preventing logical analysis from attaining perfect involvement with nature. The generic relation of determinate conditioning, implication, also has these two distinct terms. By virtue of being an adequate condition a meaning is universal; by virtue of being an indispensable consequence a meaning is particular. This relation of determinate implication defines universality in the two senses of universal-particular and particular-universal, respectively. VI. *The conditional priority of logic.*—If Schiller's charge that logic means nothing and Mercier's that it is a silly game of spoof are true, the same depreciatory remarks can be applied to all science, for the system of objective meaning in general, with which logic deals, conditions the objectivity of all sciences. This may be interpreted as a paradox, since logic would then condition itself, but it is a paradox of the same order as that of self-consciousness, and has the same rights. To hold with some idealists that self-consciousness itself conditions the object-matter of logic is to confuse logical conditioning with epistemological polarization. For epistemology, subjective and objective find their meaning in each other; but logical conditioning is not thus reciprocal. VII. *The objectivity of logic.* —The logical system of *what is meant* has objectivity, whatever may be the condition of the logical system itself. This is implied in any epistemology whatever that is not skeptical. Anything which is not objective is simply meaningless: logic is the science of meanings, and therefore possesses objectivity by necessity. VIII. *The co-functions of meaning.*—Three cases of meaning are distinguishable: psychological meaning is mediation between conscious subject and his object; epistemological meaning is mediation between subjective and objective content; logical meaning is mediation between determinants of definition, or co-functionality between character and locus. Now character and locus determine each other: there is a relationship between them (a relationship which is qualitative and quantitative at the same time). This co-functionality between character and locus is the fundamental principle of logic, sometimes called the law of identity. When we distinguish between sameness (oneness of character) and identity (oneness of locus) the law of identity is no longer mere tautology. This inverse co-functionality can be demonstrated in that the connotative magnitude is not contained in the connotation of the meaning, but inversely. Thus the magnitude of meaning character is incommensurable with the magnitude of meaning locus, and thus they are different from trigonometrical co-functions. IX. *Definition and proposition.*—The presuppositions of species and differentia involve a limit, so that the ultimate case of definition falls apart into two antipodal surds: identity and dichotomy. Identity contradicts distinctness; dichotomy contradicts mediativeness. Genuine logical mediation is, on the side of locus, non-identical community; on the side of character, discriminate co-subsistence, and can therefore be exhausted in four *sui generis* types: in terms of locus; (1) community, (2) exclusion, (3) inclusion, (4) externality; in terms of character; (1) co-subsistence, (2) independence, (3) implication, (4) incompatibility. All types of mediation are, however, variables; *i. e.*, limits of variation are determinants in their respective definitions. Thus, analysis of determinate mediation results in two generic types: those relations to whose propositional formulation the logic of the schools has attached the symbols 'I' and 'O'; and those of the determinants of quantitative limits. Such analysis is the sole business and interest of the formal logician: he pays no attention to any patent method of investigation which this or that school of philosophy may advocate.

F. W. A. MILLER.